

What is claimed is:

1. A polarizing filter comprising:

a polarized film;

5 a first protective film adhered to one surface of said polarized film; and

a second protective film adhered to another surface of said polarized film, said second protective film being different from said first protective film in at least one of thickness, physical properties and materials;

10 wherein when M1 is a coefficient of expansion by water absorption of said first protective film in a direction of a light absorption axis of said polarizing filter and M2 is a coefficient of expansion by water absorption of said second protective film in the direction of the light absorption axis
15 of said polarizing filter, then the coefficients of expansion M1, M2 satisfying a formula;

$$0.65 \cdot M1 < M2 < 1.55 \cdot M1.$$

2. A polarizing filter described in claim 1, the
20 coefficients of expansion M1, M2 satisfy a formula, $0.70 \cdot M1 < M2 < 1.40 \cdot M1$.

3. A polarizing filter described in claim 2, the
coefficients of expansion M1, M2 satisfy a formula, $0.85 \cdot M1 <$
25 $M2 < 1.20 \cdot M1$.

4. A polarizing filter described in claim 3, the
coefficients of expansion M1, M2 are larger than 0.02.

30 5. A polarizing filter described in claim 1, wherein said first or second protective film is cut to a strip specimen having

120 mm length in the direction of the light absorption axis of said polarizing filter, said strip specimen is set under a temperature of 23 °C and relative humidity of 65% for two hours, two holes having diameter of 6mm are thereafter formed to have
5 a distance about 100 mm in the direction of the light absorption axis, the distance is measured to obtain an initial distance L1, said strip specimen is dipped in a water for 30 minutes, said distance between said two holes is measured to obtain a water absorption distance L2, and said coefficients of
10 expansion M1 and M2 are calculated from a formula;

$$M1 \text{ and } M2 = \{(L2-L1)/L1\} \times 100.$$

6. A polarizing filter as claimed in claim 1, wherein of a difference of the thickness between said first and second
15 protective films is more than 2 μm, and less than 100 μm.

7. A polarizing filter as claimed in claim 6, wherein at least one of said first and second protective films is cellulose acylate.
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8. A polarizing filter as claimed in claim 7, wherein said polarized film is polyvinylalcohol series.

9. A polarizing filter as claimed in claim 8, wherein said
25 first and second protective films are adhered to said polarized film with an adhesive agent.

10. A producing method of said polarizing filter comprising a step of:
30 selecting first and second protective films, said first and second protective films being different in at least one of

thickness, physical properties and materials, and when M_1 , M_2 being respective coefficients of expansion of said first and second protective films in a direction of a light absorption axis of said polarizing filter, the coefficients of expansion
5 M_1 M_2 satisfy a condition,

$$0.65 \cdot M_1 < M_2 < 1.55 \cdot M_1; \text{ and}$$

adhering said first and second protective films to respective surfaces of a polarized film.

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